IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Art Unit: 1652
LEY, et al.	Examiner:
Serial No.: 10/038,722	Washington, D.C.
Filed: January 8, 2002	June 21, 2002
For: ITI-D1 KUNITZ DOMAIN MUTANTS AS HNE INHIBITORS	Docket No.: LEY=1B
	Confirmation No.: 4070

INFORMATION DISCLOSURE STATEMENT [IDS]

Honorable Commissioner of Patents
Washington, D.C. 20231

S i r :

This Information Disclosure Statement is submitted in accordance with 37 C.F.R. 1.97, 1.98, and it is requested that the information set forth in this statement and in the listed documents be considered during the pendency of the above-identified application, and any other application relying on the filing date of the above-identified application or cross-referencing it as a related application.

1. This IDS should be considered, in accordance with 37 C.F.R. 1.97, as it is filed:

[ ] A. within three months of the filing date of the above-identified national application or within three months of the entry into the national stage of the above-identified international application. See 37 CFR 1.97(b).

[X] B. before the mailing date of a first office action on the merits. See 37 CFR 1.97(b).

[ ] C. after (A) and (B) above, but before final rejection or allowance, and Applicants have made the necessary certification (box "i" below) or paid the necessary fee (box "ii" below). See 37 CFR 1.97(c).

[ ] i. Counsel certifies that, upon information and belief, each item of information listed herein was either (a) cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS

or (b) was not cited in a communication from a foreign patent office in a counterpart foreign application and was not known to any individual designated in 1.56(c) more than three months prior to the filing of this IDS.

[ ] ii. A check for the fee set forth in 1.17(p), presently believed to be $180, is enclosed (check no. _____).

[ ] D. after (A), (B) and (C) above, but before payment of the issue fee. Applicant petitions under 37 C.F.R. 1.97(d) for consideration of this IDS. A check for the fee set forth in 1.17(i)(1), presently believed to be $130 is enclosed (check no. _____). Counsel certifies that, upon information and belief, each item of information listed herein was either (i) cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS or (ii) was not cited in a communication from a foreign patent office in a counterpart foreign application and was not known to any individual designated in 1.56(c) more than three months prior to the filing of this IDS.

[ ] E. As a submission in accordance with the transitional procedure for limited examination after final rejection pursuant to 37 CFR §1.129(a). Pursuant to MPEP §706.07(g), page 700-46, col. 2 (February 2000), this IDS is treated as if filed with a period set forth in 37 CFR §1.97(b) and considered without the petition and petition fee required by 1.97(d).

2. In accordance with 37 C.F.R. 1.98, this IDS includes a list (e.g., form PTO-1449) of all patents, publications, or other information submitted for consideration by the office, either incorporated into this IDS or as an attachment hereto. A copy of each document is attached, except as explained below.

[ ] While an IDS filed under §1.97 must contain a "list of all patents, publications or other information submitted for consideration by the Office", see §1.98(a) (1), the only requirement for the list is that it provide the information set

forth in §1.98(b). There is no requirement that a form PTO-1449 be used (MPEP §609 merely says that use of this form is "encouraged"). Counsel has used a list provided to him by Applicants, and not transferred the information to a PTO-1449, to avoid the risk of any inadvertent error in transferring the information.

[ ] A. Documents _____ are deemed substantially cumulative to documents _____, and, in accordance with 1.98(c), only a copy of each of the latter documents is enclosed.

[X] B. Certain documents were previously cited by or submitted to the Office in the following prior application(s), which are relied upon under 35 U.S.C. 120:

08/849,406.

Applicants identify these documents by attaching hereto copies of the form PTO-892s and PTO-1449s from the files of the prior applications or a fresh PTO-1449 listing these documents, and request that they be considered and made of record in accordance with 1.98(d). Per 37 CFR 1.98(d), copies of these documents need not be filed in this application. If copies of any of these documents cannot be found in the files of the prior applications, the Examiner is requested to so notify counsel before taking action in this case, so replacement copies can be submitted. While an IDS filed under §1.97 must contain a "list of all patents, publications or other information submitted for consideration by the Office", see §1.98(a) (1), the only requirement for the list is that it provide the information set forth in §1.98(b). There is no requirement that a form PTO-1449 be used (MPEP §609 merely says that use of this form is "encouraged") and no prohibition on submitting a copy of a form PTO-1449 or form PTO-892 from a prior case. Indeed, the re-use of such forms is desirable as it avoids error in transferring the information, and evidences that the reference was considered in a prior application. A previously accepted PTO-1449, or an examiner-prepared PTO-892, necessarily complies with §1.98(b).

[ ] 3. Documents _____ are not in the English

language. In accordance with 1.98(c), Applicants state:

[ ] documents _____ already contain an English language abstract, summary or claim set.

[ ] a publicly available abstract is attached to each of documents _____, and the source of each abstract is indicated thereon.

[ ] documents _____ are patents or published patent applications for which counterpart English language patents or patent applications exist, and are enclosed, as follows:

Foreign Lang. Doc.#	English Lang. Doc.#
[insert]	[insert]

[ ] applicants have prepared an English translation of at least the pertinent portions of documents _____, and copies are attached.

[ ] A concise explanation of the relevance of documents _____ is found in the attached search report from the _____ Patent Office (see reply to Comment 68 in the preamble to the final rules; 1135 OG 13 at 20).

[ ] A concise explanation of the relevance of documents _____ is set forth as follows:
[Insert concise explanation of relevance]

4. No explanation of relevance is necessary for documents in the English language (see reply to Comments 67 and 68 in the preamble to the final rules; 1135 OG 13 at 20).

5. If the month of publication of a nonpatent reference is not stated, it is because it is not apparent from review of the reference. If requested to do so by the Examiner, Applicants will attempt to locate and write to the publisher.

If the publication date of a cited document is set forth only as a publication year, and that year is prior to the year of filing or, if priority is claimed, year of priority of this application, then the particular month of publication is not in issue. Likewise if that publication year is after the year of filing of this application, the month of publication is not in

issue.

If the date of publication of a nonpatent reference is stated, then, except as explained below, it is the nominal date stated in the reference, or in a larger document (journal or book) from which the reference was extracted. Applicants reserve the right to challenge this date by contacting the publisher to determine the actual shipment date, or by contacting recipients to determine the receipt dates.

6. Other information being provided for the examiner's consideration follows:

[insert other information]

7. In accordance with 37 C.F.R. 1.97(g) and (h), the filing of this IDS should not be construed as a representation that a search has been made or that information cited is, or is considered to be, material to patentability as defined in §1.56 (b), or that any cited document listed or attached is (or constitutes) prior art. Unless otherwise indicated, the date of publication indicated for an item is taken from the face of the item and Applicant reserves the right to prove that the date of publication is in fact different.

8. The Commissioner is hereby authorized and requested to charge any additional fees which may be required in connection with this application or credit any overpayment to Deposit Account No. 02-4035.

Respectfully submitted,

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FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY DOCKET NO: LEY=1A	SERIAL NO: 08/849,406
LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary)	APPLICANT: LEY, et al	
	FILING DATE: June 21, 1999	GROUP: 1652

U.S. PATENT DOCUMENTS (include at least patentee, patent number and issue date)

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	PATENTEE	CLASS	SUB-CLASS	FILING DATE IF APPROP.

FOREIGN PATENT DOCUMENTS (include at least document number, publication date and country)

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES/NO

OTHER DOCUMENTS (include author, title, name of publication, volume, pages & date of publication)

	AA	ALBRECHT, et al., Elastase Inhibition by the Inter-αTrypsin Inhibitor and Derived Inhibitors of Man and Cattle, HOPPE-SEYLER'S Z. PHYSIOL. CHEM., vol. 364, pgs. 1703-1708, December 1983.
	AB	ALBRECHT, et al., Kunitz-Type Proteinase Inhibitors Derived by Limited Proteolysis of the Inter-α-Trypsin Inhibitor, IX[1-8], HOPPE-SEYLER'S Z. PHYSIOL. CHEM., vol. 364, pgs. 1697-1702, December 1983.
	AC	BECKMANN, et al, Preparation of chemically 'mutated' aprotinin homologues by semisynthesis P1 substitutions change inhibitory specificity, EUR. J. BIOCHEM., vol. 176, pgs. 675-82, 1988.
	AD	BLOW, et al., A Model for the Association of Bovine Pancreatic Trypsin Inhibitor with Chymotrypsin and Trypsin, J. MOL. BIOL., vol. 69, pgs. 137-144, 1972.
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	AH	DIARRA-MEHRPOUR, et al., Structural analysis of the human inter-α-trypsin inhibitor light-chain gene, EUR. J. BIOCHEM., vol. 191, pgs. 131-139, 1990.
	AI	DUFTON, Mark J., Proteinase inhibitors and dendrotoxins, EUR. J. BIOCHEM., vol. 153, pgs. 647-654, 1985.
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	AM	ESCRIBANO, et al., Location and characterization of the three carbohydrate prosthetic groups of human protein HC, FEBS LETTERS, vol. 266, no. 1,2, pgs. 167-170, June 1990.
	AN	ESCRIBANO, et al., The Protein HC Chromophore Is Liked to the Cysteine Residue at Position 34 of the Polypeptide Chain by a Reduction-resistant Bond and Causes the Charge Heterogeneity of Protein HC, THE JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 266, no. 24, pgs. 15758-15763, August 25, 1991.
	AO	GEBHARD, et al., Inter-α-trypsin inhibitor and its close relatives, BARRETT AND SALVESEN (EDS.) PROTEINASE INHIBITORS, chapter 11, pgs. 388-401, 1986.
	AP	GIRARD, et al., Functional significance of the Kunitz-type inhibitory domains of lipoprotein-associated coagulation inhibitor, LETTERS TO NATURE, vol. 338, pgs. 518-520, April 6, 1989.
	AQ	GOLDSTEIN, et al., Lysosomal Enzymes from Polymorphonuclear Leukocytes and Proteinase Inhibitors in Patients with Cystic Fibrosis , AM. REV. RESPIR. DIS., vol. 134, pgs. 49-56, 1986.

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY DOCKET NO: LEY=1A	SERIAL NO: 08/849,406
LIST DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary)	APPLICANT: LEY, et al.	
	FILING DATE: June 21, 1999	GROUP: 1652

		OTHER DOCUMENTS (include author, title, name of publication, volume, pages and date of publication)
	AR	HEIDTMANN, et al., Human α_1-proteinase inhibitor, BARRETT AND SALVESEN (EDS.) PROTEINASE INHIBITORS, chapter 14, pgs. 441-456, 1986.
	AS	HOCHSTRASSER, et al., Kunitz-Type Proteinase Inhibitors Derived by Limited Proteolysis of the Inter-α-Trypsin Inhibitor, $V^{[1-4]}$, HOPPE-SEYLER'S Z. PHYSIOL. CHEM., vol. 362, pgs. 1357-1362, October 1981.
	AT	HOCHSTRASSER, et al., Kunitz-Type Proteinase Inhibitors Derived by Limited Proteolysis of the Inter-α-Trypsin Inhibitor, $VII^{[1-6]}$, HOPPE-SEYLER'S Z. PHYSIOL. CHEM., vol. 364, pgs. 1679-1687, December 1983.
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	AV	HOCHSTRASSER, et al., Kunitz-Type Proteinase Inhibitors Derived by Limited Proteolysis of the Inter-α-Trypsin Inhibitor, $X^{[1]}$, BIOL. CHEM., vol. 366, pgs. 473-478, May 1985.
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	AZ	LINDQVIST, et al., Bovine α_1-microglobulin/bikuni. Isolation and characterization of liver cDNA and urinary α_1-microglobulin, BIOCHIMICA ET BIOPHYSICA ACTA, vol. 1306, pgs. 98-106, 1996.
	BA	LOPEZ, et al., Human protein HC displays variability in its carboxyl-terminal amino acid, FEBS LETTERS, vol. 144, no. 2, pgs. 349-353-, August 1982.
	BB	MCELVANEY, et al., Aerosol α1-antitrypsin treatment for cystic fibrosis, THE LANCET, vol. 337, pgs. 392-394, February 16, 1991.
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	BE	NAKAO, et al., sc-39026, A Specific Human Neutrophil Elastase Inhibitor, BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 147, no. 2, pgs. 666-674, September 15, 1987.

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	BF	ØDUM, Lars, Inter-α-Trypsin Inhibitor: A Plasma Proteinase Inhibitor with a Unique Chemical Structure, INT. J. BIOCHEM, vol. 22, no. 9, pgs. 925-930, 1990.
	BG	OTIN, et al., The Complete Amino Acid Sequence of Human Complex-Forming Glycoprotein Heterogeneous in Charge (Protein HC) from One Individual, ARCHIVES OF BIOCHEMISTRY AND BIOPHYSICS, vol. 228, no. 2, pgs. 544-554, February 1, 1984.
	BH	REISINGER, et al., Human Inter-α-Trypsin Inhibitor: Localization of the Kunitz-Type Domains in the N-terminal Part of the Molecule and their Release by a Trypsin-Like Proteinase, BIOL. CHEMISTRY HOPPE-SEYLER, vol. 366, pgs. 479-483, May 1985.
	BI	SALIER, Jean-Philippe, Inter-α-trypsin inhibitor: emergence of a family within the Kunitz-type protease inhibitor superfamily, TIBS, vol. 15, pgs. 435-439, November 1990.
	BJ	SELLOUM, et al., The Effect of the Glycosaminoglycan Chain Removal on some Properties of the Human Urinary Trypsin Inhibitor, BIOL. CHEM. HOPPE-SEYLER, vol. 368, pgs. 47-55, January 1987.
	BK	SINHA, et al., Conversion of the Alzheimer's β-Amyloid Precursor Protein (APP) Kunitz Domain into a Potent Human Neutrophil Elastase Inhibitor, THE JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 266, no. 31, pgs. 21011-21013, November 5, 1991.
	BL	SNIDER, et al., Putative Role of Neutrophil Elastase in the Pathogenesis of Emphysema, ANNALS NEW YORK ACADEMY OF SCIENCES, vol. 624, pgs. 45-59, 1991.
	BM	SWAIM, et al., Modification of the tandem reactive centres of human inter-α-trypsin inhibitor with butanedione and cis-dichlorodiammineplatinum (II), BIOCHEM. J., vol. 254, pgs. 171-178, 1988.
	BN	TAKAGI, et al., Complete Amino Acid Sequence of Human α,-Microglobulin, BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 98, no. 4, pgs. 997-1001, February 27, 1981.
	BO	TRABONI, et al., Sequence of a full length cDNA coding for human protein HC (α1microglobulin), NUCLEIC ACIDS RESEARCH, vol. 14, no. 15, pg. 6340, August 1986.
	BP	TSCHESCHE, et al., Semisynthetic engineering of proteinase inhibitor homologues, BIOCHIMICA ET BIOPHYSICA ACTA, vol. 913, pgs. 97-101, 1987.
	BQ	VETR, et al., Structure of the Human α1-Microglobulin-Bikunin Gene, BIOL. CHEM. HOPPE-SEYLER, vol. 371, pgs. 1185-1196, December 1990.
	BR	WEISS, Stephen J., Tissue Destruction by Neutrophils, THE NEW ENGLAND JOURNAL OF MEDICINE, vol. 320, no. 6, pgs. 365-376, February 9, 1989.
	BS	WUN, et al., Cloning and Characterization of a cDNA Coding for the Lipoprotein-associated Coagulation Inhibitor Shows That It Consists of Three Tandem Kunitz-type Inhibitory Domains, THE JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 263, no. 13, pgs. 6001-6004, May 5, 1988.
	BT	XU, et al., The Crystal Structure of Bikunin from the Inter-α-Inhibitor Complex: A Serine Protease Inhibitor with Two Kunitz Domains, J. MOL. BIOL., vol. 276, pgs. 955-966, 1998.
	BU	GEBHARD, et al., Structure of Inter-α-Inhibitor (Inter-α-Trypsin Inhibitor) and Pre-α-Inhibitor: Current State and Proposition of a New Terminology, BIOL. CHEM. HOPPE-SEYLER, vol. 371, Suppl., pgs. 13-22, May 1990

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Notice of References Cited	Application/Control No. 08/849,406	Applicant(s)/Patent Under Reexamination LEY ET AL.	
	Examiner Kathleen M Kerr	Art Unit 1652	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,118,668	06-1992	Auerswald et al.	-
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Sinha et al. Conversion of the Alzheimer's beta-Amyloid Precursor Protein (APP) Kunitz Domain into a Potent Human Neutrophil Elastase Inhibitor. J Biol. Chem. (1991) 266(31):21011-21013.
	V	Roberts et al. Protease inhibitor display M13 phage: selection of high-affinity neutrophil elastase inhibitors. Gene (1992) 121:9-15.
	W	Travis et al. Potential problems in designing elastase inhibitors for therapy. Am. Rev. Respir. Dis. (1991) 143:1412-1415.
	X	Roberts et al. Directed evolution of a protein: Selection of potent neutrophil elastase inhibitor displayed on M13 fusion phage. Proc. Natl. Acad. Sci. (1992) 89:2429-2433.

A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.